

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Ming C. Hao et al.

Confirmation No.: 3816

Application No.: 10/694,076

Examiner: Lay M.

Filing Date: 10-27-2003

Group Art Unit: 2672

Title: VISUAL BOUNDARIES FOR AGGREGATE INFORMATION IN PIXEL-ORIENTED GRAPHS

Mail Stop Appeal Brief-Patents
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TRANSMITTAL OF APPEAL BRIEF

Sir:

Transmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on 2-22-06.

The fee for filing this Appeal Brief is (37 CFR 1.17(c)) \$500.00.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

() (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)-(d) for the total number of months checked below:

- | | |
|------------------|-----------|
| () one month | \$120.00 |
| () two months | \$450.00 |
| () three months | \$1020.00 |
| () four months | \$1590.00 |

() The extension fee has already been filled in this application.

(X) (b) Applicant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

Please charge to Deposit Account **08-2025** the sum of \$500.00. At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 CFR 1.25. Additionally please charge any fees to Deposit Account 08-2025 under 37 CFR 1.16 through 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees. A duplicate copy of this sheet is enclosed.

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Typed Name: Paul H. Horstmann

Signature: Paul H. Horstmann

Respectfully submitted,

Ming C. Hao et al.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

Ming C. Hao et al.

Application No: 10/694,076

Filed: 10-27-2003

For: VISUAL BOUDARIES FOR
AGGREGATE INFORMATION IN
PIXEL-ORIENTED GRAPHS

Examiner: Lay M.

Art Unit: 2672

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Paul H. Horstmann

Name of Person Mailing Correspondence

Paul H. Horstmann
Signature

4-21-06
Date

Appellant's Brief (Pursuant to 37 C.F.R. §41.37)

Dear Sir:

Applicant/ Appellant submits this Appeal Brief in connection with the above-referenced patent application which is on appeal to the Board of Patent Appeals and Interferences.

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REAL PARTY IN INTEREST

The real party in interest in this application is Hewlett-Packard Development Company, L.P.

RELATED APPEALS AND INTERFERENCES

Appellant is unaware of any other related appeals or interferences that may directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

STATUS OF THE CLAIMS

Claims 1-7, 9-14, 16-21, and 23-25 stand rejected under 35 U.S.C. §102(b) as being unpatentable over U.S. Patent no. 5,581,797 of *Baker et al.* ("*Baker*").

Claims 1, 8, 11, 13, 15, 20, and 22 stand rejected under 35 U.S.C. §102(b) as being unpatentable over U.S. Patent no. 5,929,863 of *Tabei et al.* ("*Tabei*").

Appellant appeals the rejection of all of the pending claims 1-25. Claims 1-25 as currently pending are set forth in the attached Appendix.

STATUS OF AMENDMENTS

Appellant is unaware of any amendments filed after the Final Office Action mailed 11-22-2005 which finally rejected claims 1-25.

SUMMARY OF CLAIMED SUBJECT MATTER

Independent claims 1, 13, and 20 are directed to generating a pixel-oriented graph that depicts a set of values of a variable in which each pixel has a pixel value that visually represents one of the values of the variable and which includes a visual boundary for representing an aggregate of a set of values of the variable.

Independent claim 1 is a method that includes determining a visual boundary for representing an aggregate of a set of values of a variable depicted in a pixel-oriented graph (see page 5, line 29 through page 6, line 24 and Figure 2, element 200 of Appellant's specification) and constructing a set of pixel blocks that represent the values such that the pixel blocks are visually distinguished by the visual boundary (see page 6, lines 26-32 and Figure 2, element 202 and Figures 3a-3f of Appellant's specification).

Independent claim 13 is a data analysis system that includes a data store (see page 4, lines 3-18 and Figure 1, element 10 of Appellant's specification) and a display (see page 5, lines 4-11 and 20-27 and Figure 1, element 30 of Appellant's specification) and a graph generator that obtains a set of values from the data store and that determines a visual boundary for representing an aggregate of the values and that constructs a set of pixel blocks that represent the values such that the pixel blocks are visually distinguished by the visual boundary (see page 5, line 20 through page 6, line 32 and Figure 1, element 20 and Figures 3a-3f of Appellant's specification).

Independent claim 20 is a computer-readable storage medium that contains a computer program that when executed generates a pixel-oriented graph by determining a visual boundary for representing an aggregate of a set of values of a variable depicted in the pixel-oriented graph (see page 5, line 29 through page 6, line 24 and Figure 2, element 200 of Appellant's specification) and constructing a set of pixel blocks that represent the values such that the pixel blocks are visually distinguished by the visual boundary

(see page 6, lines 26-32 and Figure 2, element 202 and Figures 3a-3f of Appellant's specification).

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

I: Rejection of claims 1-7, 9-14, 16-21, and 23-25 as being anticipated by *Baker*.

II: Rejection of claims 1, 8, 11, 13, 15, 20, and 22 as being anticipated by *Tabei*.

ARGUMENT

I: Claims 1-7, 9-14, 16-21, and 23-25 are not anticipated by *Baker* because *Baker* does not disclose the limitations of independent claims 1, 13, and 20.

Appellant respectfully submits that claims 1, 13, and 20, and claims 2-7, 9-12, 14, 16-19, 21, and 23-25 which depend from claims 1, 13, and 20, are not anticipated by *Baker* because *Baker* does not disclose the limitations in claims 1, 13, and 20. For example, *Baker* does not disclose a pixel-oriented graph as claimed in claims 1, 13, and 20. Moreover, *Baker* does not disclose a visual boundary that represents an aggregate of a set of values of a variable depicted in a pixel-oriented graph as claimed in claims 1, 13, and 20.

A. *Baker* does not disclose a pixel-oriented graph as claimed in claims 1, 13, and 20.

Appellant submits that *Baker* does not disclose a pixel-oriented graph as claimed in claims 1, 13, and 20. A pixel-oriented graph as claimed in claims 1, 13, and 20 includes a set of pixels each pixel having a pixel value that visually represents one of the values of a variable depicted in the pixel-oriented graph. *Baker* does not disclose a pixel-oriented graph in which each pixel has a pixel value that visually represents one of the values of a variable depicted in the pixel-oriented graph claimed in claims 1, 13, and 20. Instead, *Baker* discloses a graph in which an area of a geometric shape represents a value of a variable. For example, *Baker* discloses a set of geometric shapes that each have an area that represents the number of lines of code a corresponding subsystem of a hierarchical software system. (*Baker*, col. 4, lines 43-45 and 57-60). It is submitted that a geometric shape having an area that visually represents lines of code as taught by *Baker* does not anticipate a pixel value that visually represents a value of a variable as claimed in claims 1, 13, and 20. It is submitted that *Baker* uses areas of geometric shapes to visually convey information rather than use the values of individual pixels to visually convey information as claimed in claims 1, 13, and 20.

The examiner has stated that it is well known in the art that displays are pixel oriented. (Page 2, line 14, Office Action, 11/22/05). Appellant respectfully points out that claims 1, 13, and 20 are not directed to a display. Instead, claims 1, 13, and 20 are directed to a pixel-oriented structure of a graph in which “pixel-oriented” means that the pixels in the graph each have a pixel value that visually represents one of the values of a variable depicted in the graph. In contrast, *Baker* discloses a structure of a graph in which an area of each geometric shape in the graph represents a value of a variable. (*Baker*, col. 4, lines 43-45 and 57-60).

B. *Baker* does not disclose a visual boundary that represents an aggregate of a set of values of a variable depicted in a pixel-oriented graph as claimed in claims 1, 13, and 20.

Appellant submits that *Baker* does not disclose a visual boundary that represents an aggregate of a set of values of a variable depicted in a pixel-oriented graph as claimed in claims 1, 13, and 20. This follows from the fact that *Baker* does not disclose a pixel-oriented graph as claimed in claims 1, 13, and 20.

The examiner has stated a visual boundary is provided by the outlines of a geometric shape disclosed in *Baker* and anticipates a visual boundary as claimed in claims 1, 13, and 20. (Page 3, last two lines, Office Action, 11/22/05). Appellant submits that an outline of a geometric shape in *Baker* is not a visual boundary as claimed in claims 1, 13, and 20 because an outline of a geometric shape in *Baker* does not represent an aggregate¹ of a set of values of a variable depicted in a pixel-oriented graph as claimed in claims 1, 13, and 20. Instead, an outline of a geometric shape in *Baker* represents a value of a variable because it represents an area of the geometric shape which in turn represents the number of lines of code in a software subsystem. (*Baker*, col. 4, lines 43-45 and 57-60).

¹ Examples of an aggregate include average, median or threshold values associated with the data depicted in the pixel-oriented graph. (See Appellant’s specification, page 1, lines 30-33).

II: Claims 1, 8, 11, 13, 15, 20, and 22 are not anticipated by *Tabei* because *Tabei* does not disclose the limitations of independent claims 1, 13, and 20.

Appellant respectfully submits that claims 1, 13, and 20, and claims 8, 11, 15, and 22 which depend from claims 1, 13, and 20, are not anticipated by *Tabei* because *Tabei* does not disclose the limitations in claims 1, 13, and 20. For example, *Tabei* does not disclose a pixel-oriented graph as claimed in claims 1, 13, and 20. Moreover, *Tabei* does not disclose a visual boundary that represents an aggregate of a set of values of a variable depicted in a pixel-oriented graph as claimed in claims 1, 13, and 20.

A. *Tabei* does not disclose a pixel-oriented graph as claimed in claims 1, 13, and 20.

Appellant submits that *Tabei* does not disclose a pixel-oriented graph in which each pixel has a pixel value that visually represents one of the values of a variable depicted in the pixel-oriented graph as claimed in claims 1, 13, and 20. Instead, *Tabei* discloses a graph in which values are represented by x and y positions of dots on the graph. For example, *Tabei* discloses a distribution graph in which the values of two variables, sales and gross margin, are visually represented by x and y positions of dots on the distribution graph. (*Tabei*, Figure 4 and col. 5, line 52 through col. 6, line 24).

The examiner has stated that *Tabei* discloses a pixel-oriented graph because the pixels in the graphs shown in Figures 11 and 12 of *Tabei* represent values. (Page 3, lines 1-3, Office Action, 11/22/05). Appellant respectfully submits that the dots in the graphs shown in Figures 11 and 12 of *Tabei* represent values by their display coordinates rather than by their pixel value as claimed in claims 1, 13, and 20. (See *Tabei*, col. 10, lines 26-30 and 49-54).

B. *Tabei* does not disclose a visual boundary that represents an aggregate of a set of values of a variable depicted in a pixel-oriented graph as claimed in claims 1, 13, and 20.

Appellant submits that *Tabei* does not disclose a visual boundary that represents an aggregate of a set of values of a variable depicted in a pixel-

oriented graph as claimed in claims 1, 13, and 20. This follows from the fact that *Tabei* does not disclose a pixel-oriented graph as claimed in claims 1, 13, and 20.

The examiner has stated a thick frame shown in Figure 4 of *Tabei* anticipates a visual boundary as claimed in claims 1, 13, and 20. (Page 8, last two lines through page 9, first two lines, Office Action, 11/22/05). Appellant submits that the thick frame shown in Figure 4 of *Tabei* is used to select data to be retrieved² (*Tabei*, Figure 4 and col. 5, line 66 through col. 6, line 35) and is not a visual boundary that represents an aggregate of a set of values of a variable depicted in a pixel-oriented graph as claimed in claims 1, 13, and 20.

² In fact, the thrust of the teachings in *Tabei* are directed to retrieving records associated with data depicted in a graph rather than constructing a pixel-oriented graph as claimed in claims 1, 13, and 20. (See Abstract of *Tabei*).

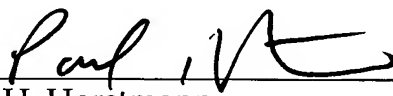
CONCLUSION

Appellant respectfully submits that the stated rejections cannot be maintained in view of the arguments set forth above. Appellant respectfully submits that all of the claims 1-25 are patentable under 35 U.S.C. §102 over the references cited by the Examiner and requests that the Board of Patent Appeals and Interferences direct allowance of the rejected claims.

Respectfully submitted,

By

Date: 4-21-06



Paul H. Horstmann
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CLAIMS APPENDIX

1. A method for generating a pixel-oriented graph, comprising:
determining a visual boundary for representing an aggregate of a set of values of a variable depicted in the pixel-oriented graph;
constructing a set of pixel blocks that represent the values such that the pixel blocks are visually distinguished by the visual boundary, each pixel block having a set of pixels each pixel having a pixel value that visually represents one of the values of the variable.
2. The method of claim 1, wherein determining a visual boundary includes obtaining a selection of the aggregate from a user.
3. The method of claim 1, wherein determining a visual boundary comprises determining a location for a line in the pixel-oriented graph in response to the aggregate.
4. The method of claim 1, wherein determining a visual boundary comprises determining a location for an area in the pixel-oriented graph in response to the aggregate.
5. The method of claim 4, wherein determining a location for an area comprises determining a location for a rectangle.
6. The method of claim 4, wherein determining a location for an area comprises determining a location for a circle.
7. The method of claim 1, wherein determining a visual boundary comprises determining a location for a curve in the pixel-oriented graph in response to the aggregate.

8. The method of claim 1, wherein constructing a set of pixel blocks comprises determining a set of pixel blocks to be positioned above the visual boundary and a set of pixel blocks to be positioned below the visual boundary.
9. The method of claim 1, further comprising filling in one or more gaps in the pixel blocks by replicating one or more pixels in the pixel blocks.
10. The method of claim 1, wherein determining a visual boundary comprises obtaining a user selection of the visual boundary.
11. The method of claim 1, further comprising coloring the visual boundary.
12. The method of claim 1, further comprising applying a weight to the visual boundary that indicates a relative importance of the aggregate.
13. A data analysis system, comprising:
 - data store for holding a set of values of a variable;
 - display for providing a pixel-oriented graph that represents the values;
 - graph generator that obtains the values from the data store and that determines a visual boundary for representing an aggregate of the values and that constructs a set of pixel blocks that represent the values such that the pixel blocks are visually distinguished by the visual boundary, each pixel block having a set of pixels each pixel having a pixel value that visually represents one of the values of the variable.
14. The data analysis system of claim 13, wherein the graph generator obtains a selection of the aggregate from a user.

15. The data analysis system of claim 13, wherein the graph generator constructs the pixel blocks by determining a set of pixel blocks to be positioned above the visual boundary and a set of pixel blocks to be positioned below the visual boundary.
16. The data analysis system of claim 13, wherein the graph generator fills in one or more gaps in the pixel blocks by replicating one or more pixels in the pixel blocks.
17. The data analysis system of claim 13, wherein the graph generator obtains a selection of the visual boundary from a user.
18. The data analysis system of claim 13, wherein the graph generator colors the visual boundary.
19. The data analysis system of claim 13, wherein the graph generator applies a weight to the visual boundary that indicates a relative importance of the aggregate.
20. A computer-readable storage medium that contains a computer program that when executed generates a pixel-oriented graph by determining a visual boundary for representing an aggregate of a set of values of a variable depicted in the pixel-oriented graph and constructing a set of pixel blocks that represent the values such that the pixel blocks are visually distinguished by the visual boundary, each pixel block having a set of pixels each pixel having a pixel value that visually represents one of the values of the variable.
21. The computer-readable storage medium of claim 20, wherein determining a visual boundary includes obtaining a selection of the aggregate from a user.

22. The computer-readable storage medium of claim 20, wherein constructing a set of pixel blocks comprises determining a set of pixel blocks to be positioned above the visual boundary and a set of pixel blocks to be positioned below the visual boundary.

23. The computer-readable storage medium of claim 20, further comprising filling in one or more gaps in the pixel blocks by replicating one or more pixels in the pixel blocks.

24. The computer-readable storage medium of claim 20, further comprising coloring the visual boundary.

25. The computer-readable storage medium of claim 20, further comprising applying a weight to the visual boundary that indicates a relative importance of the aggregate.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.